SIEMENS

MAMMOMAT 3000 Opdima™
Digital Biopsy and Spot Imaging System

SP

Wiring Diagram

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Chapter	Page	Rev.

Contents

Contents

General

This document shows the electrical connections, electrical components and testpoints within the Opdima™ system.

Documents required

The following document is referred to in this manual:

- MAMMOMAT 3000 Wiring Diagram

System overview

General

The digital biopsy and spot imaging system Opdima™ is an option to the MAMMOMAT 3000. Opdima™ consists of:

- Workstation
- Biopsy controller
- CCD camera

The biopsy controller is the central unit for the cable connections in the Opdima™ system.

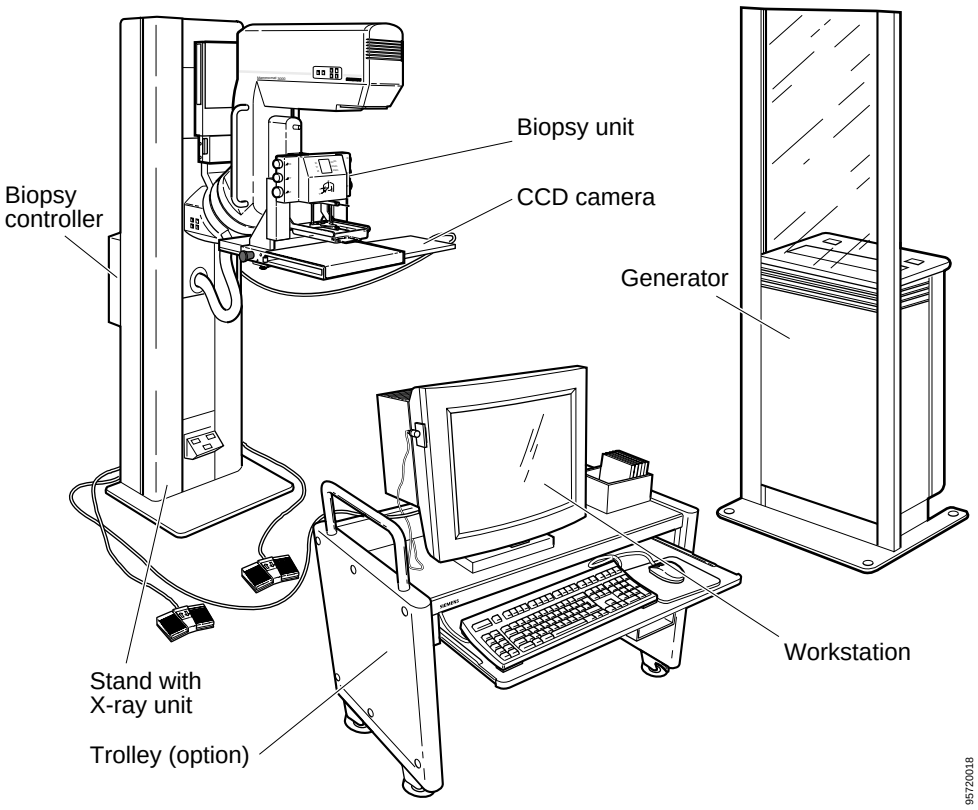

Figure 1 Opdima™ subassemblies

Location of components

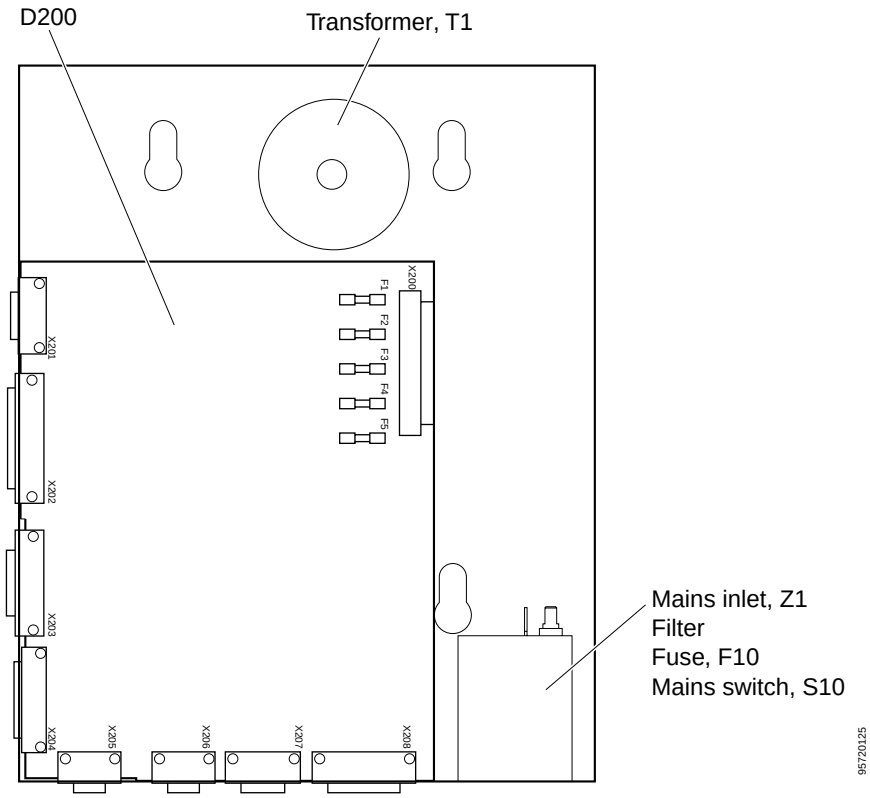

Figure 2 Biopsy controller, inside

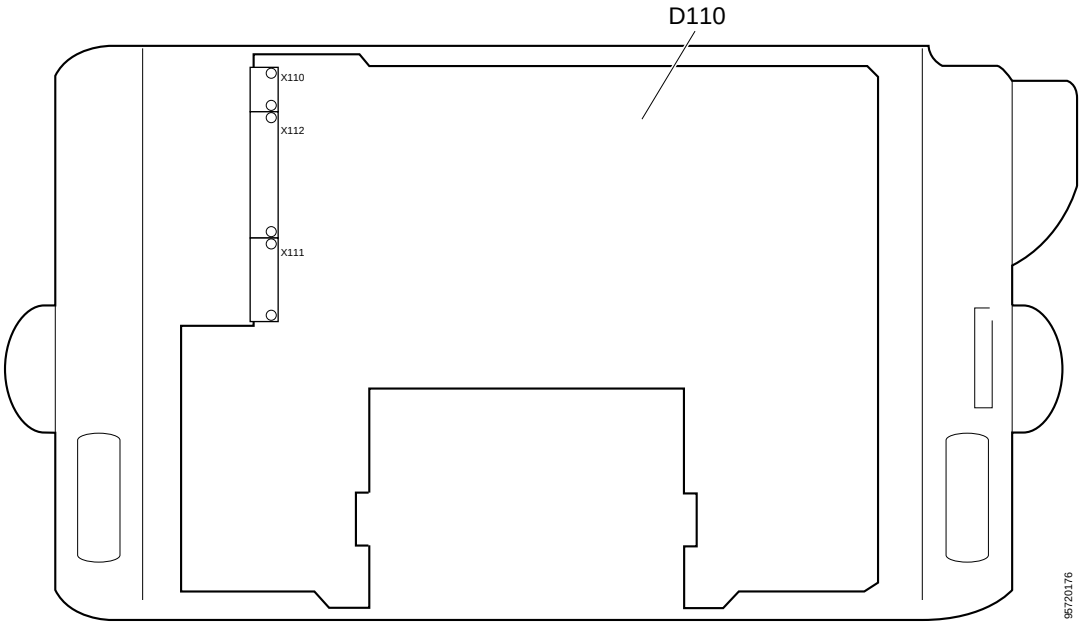

Figure 3 CCD camera, inside

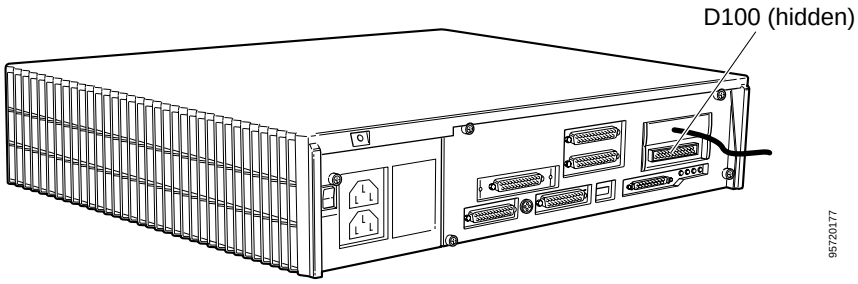

Figure 4 Workstation main unit

Cable connections

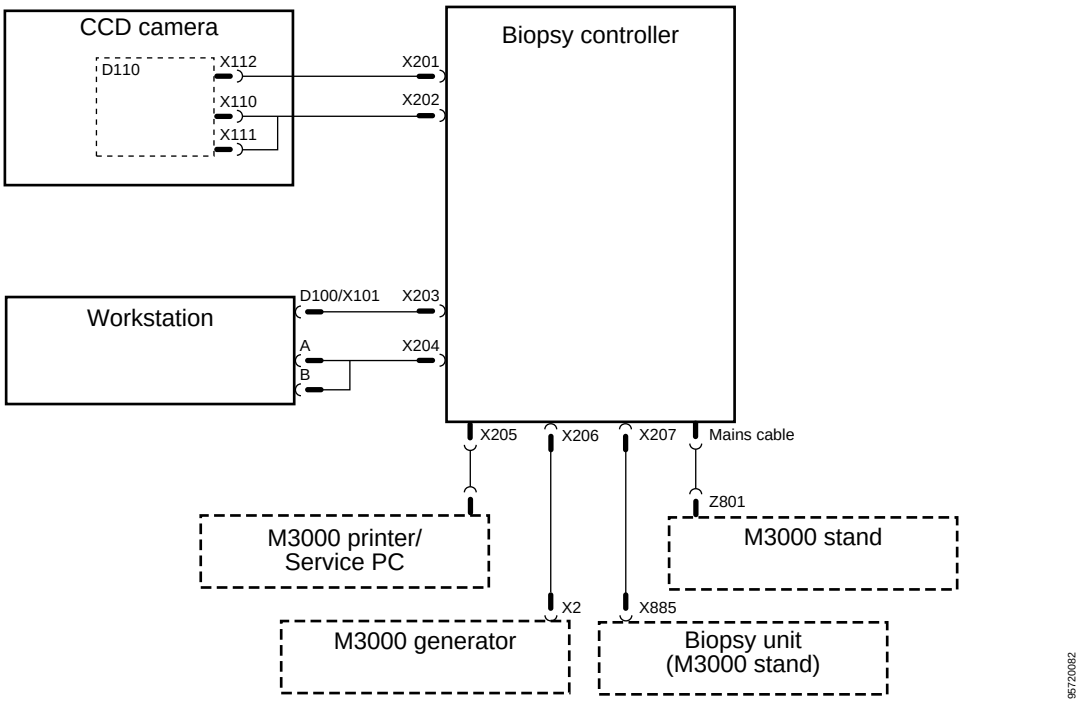

Figure 5 Cable connections

Functional diagrams

Block diagram

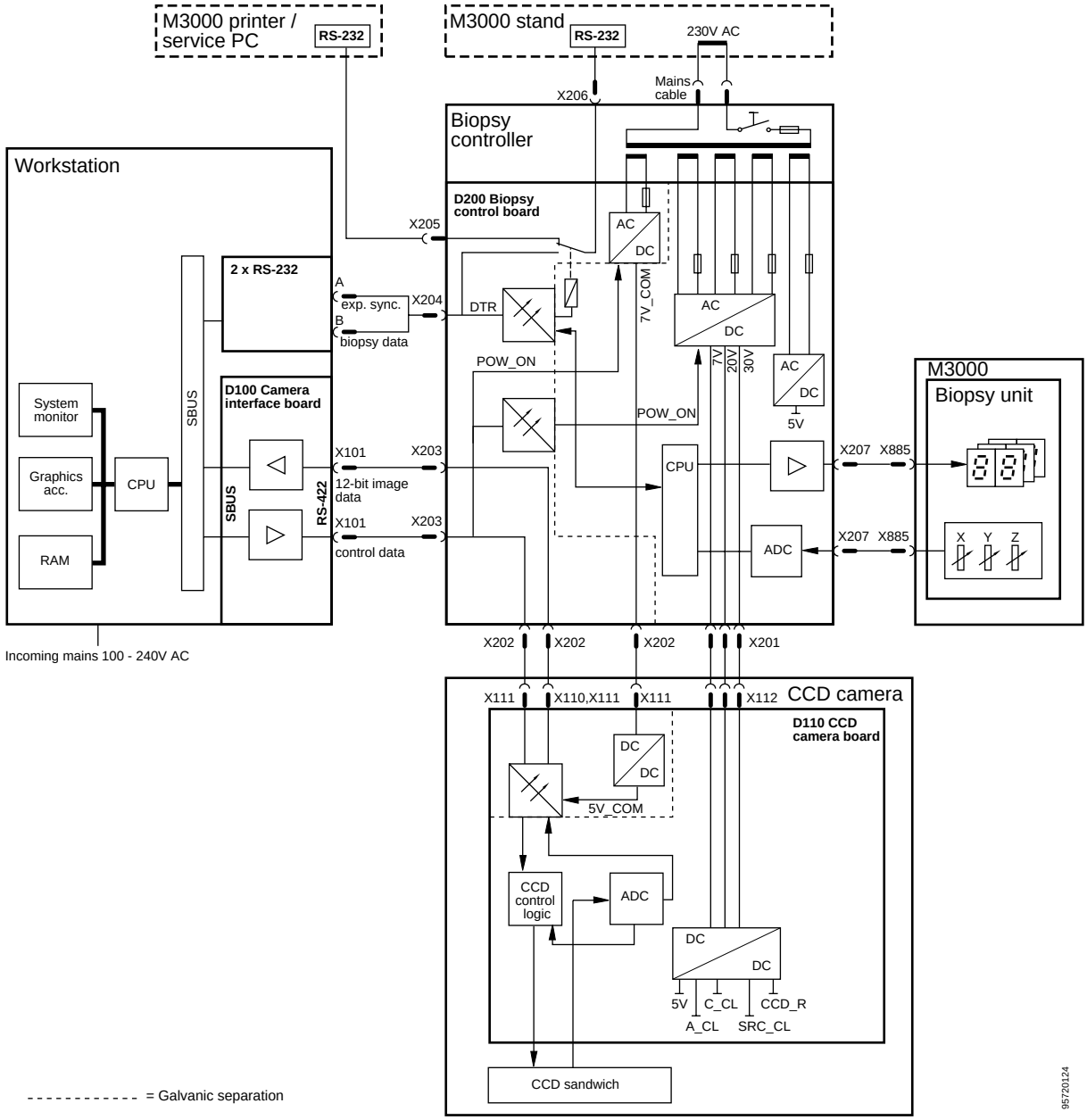

Figure 6 Block diagram

Power supply and ground connections

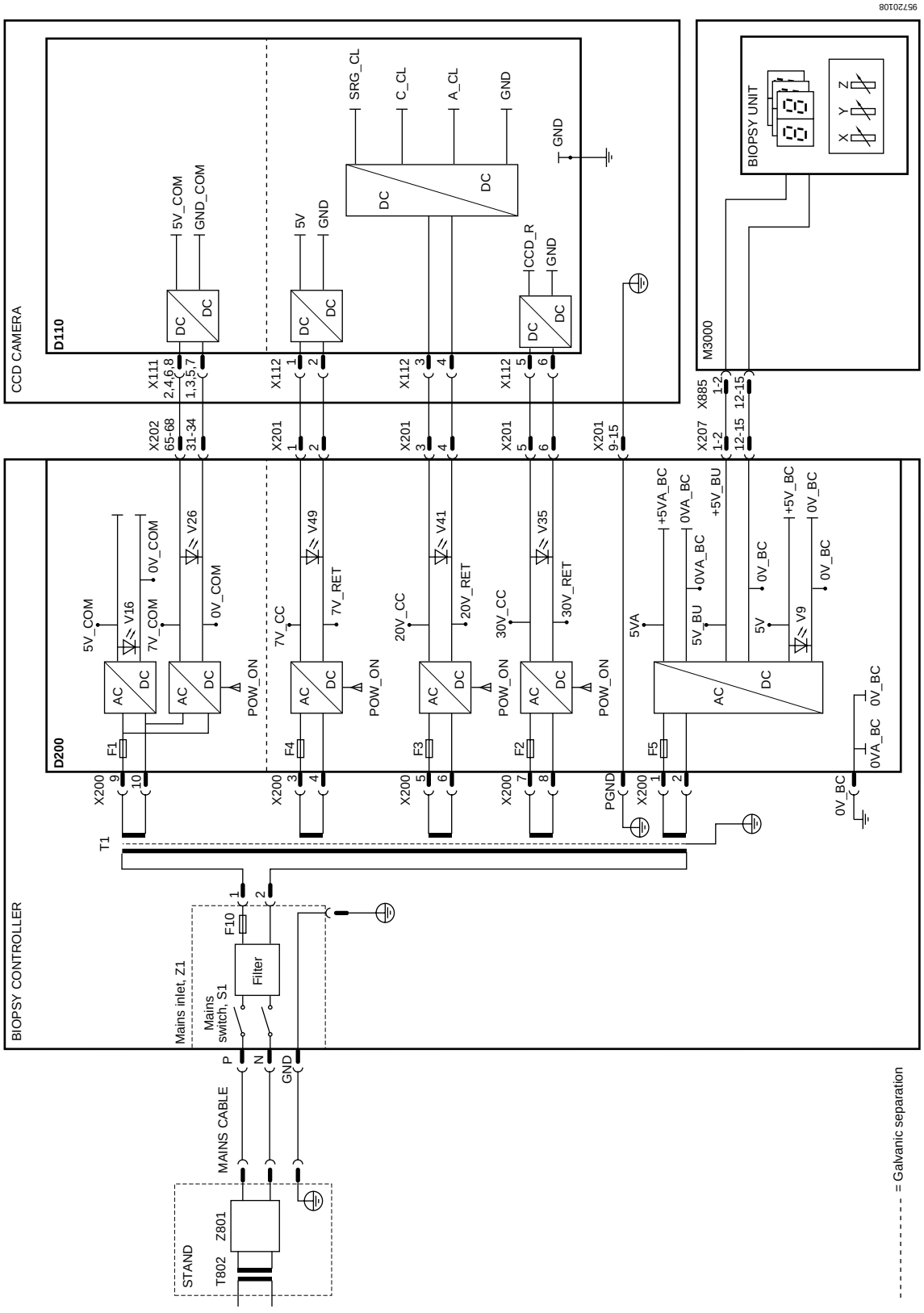

Figure 7 Power supply and ground connections

Biopsy unit potentiometers/display

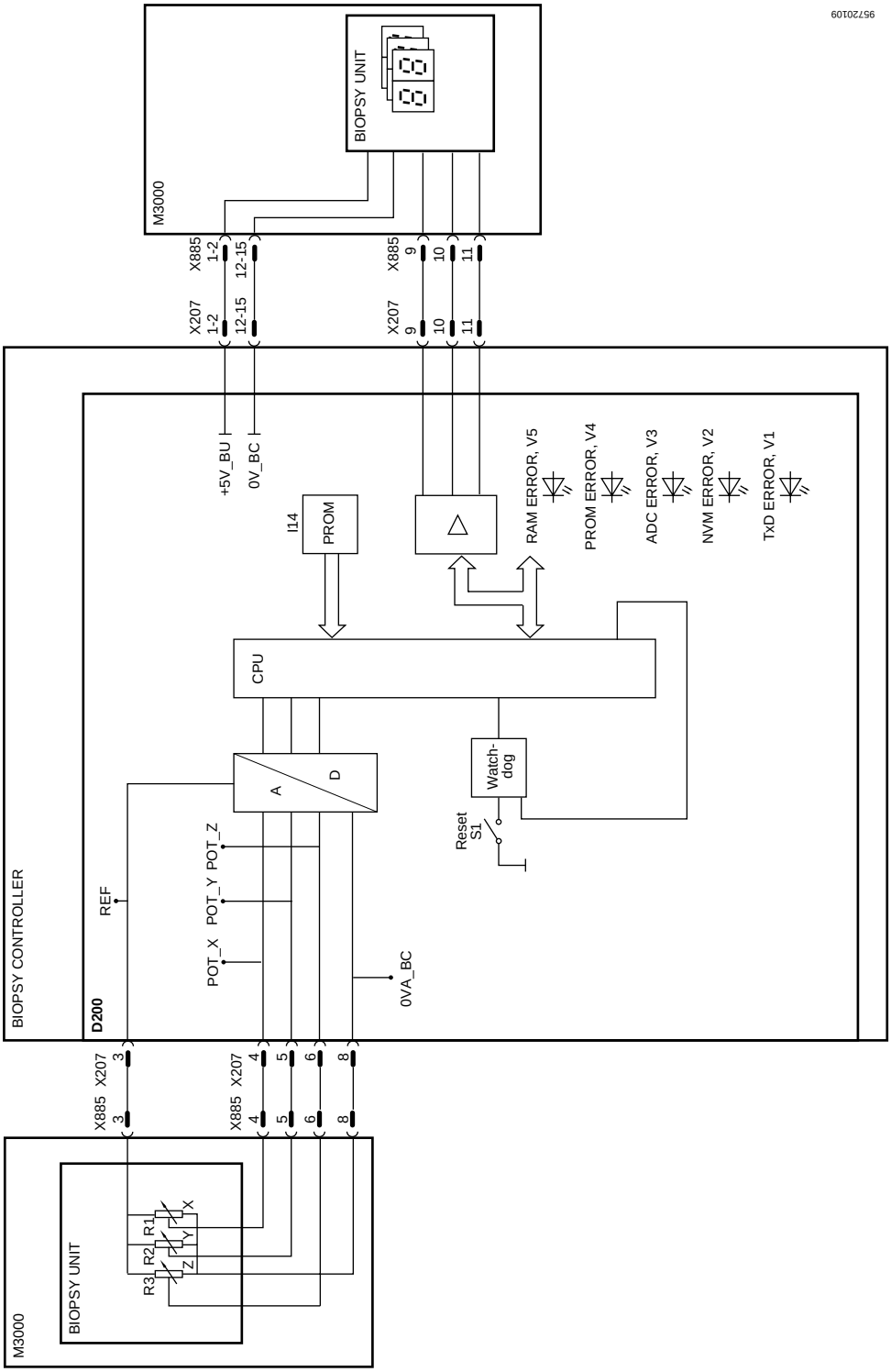

Figure 8 Biopsy unit potentiometers/display

CCD camera and RS-232 communication

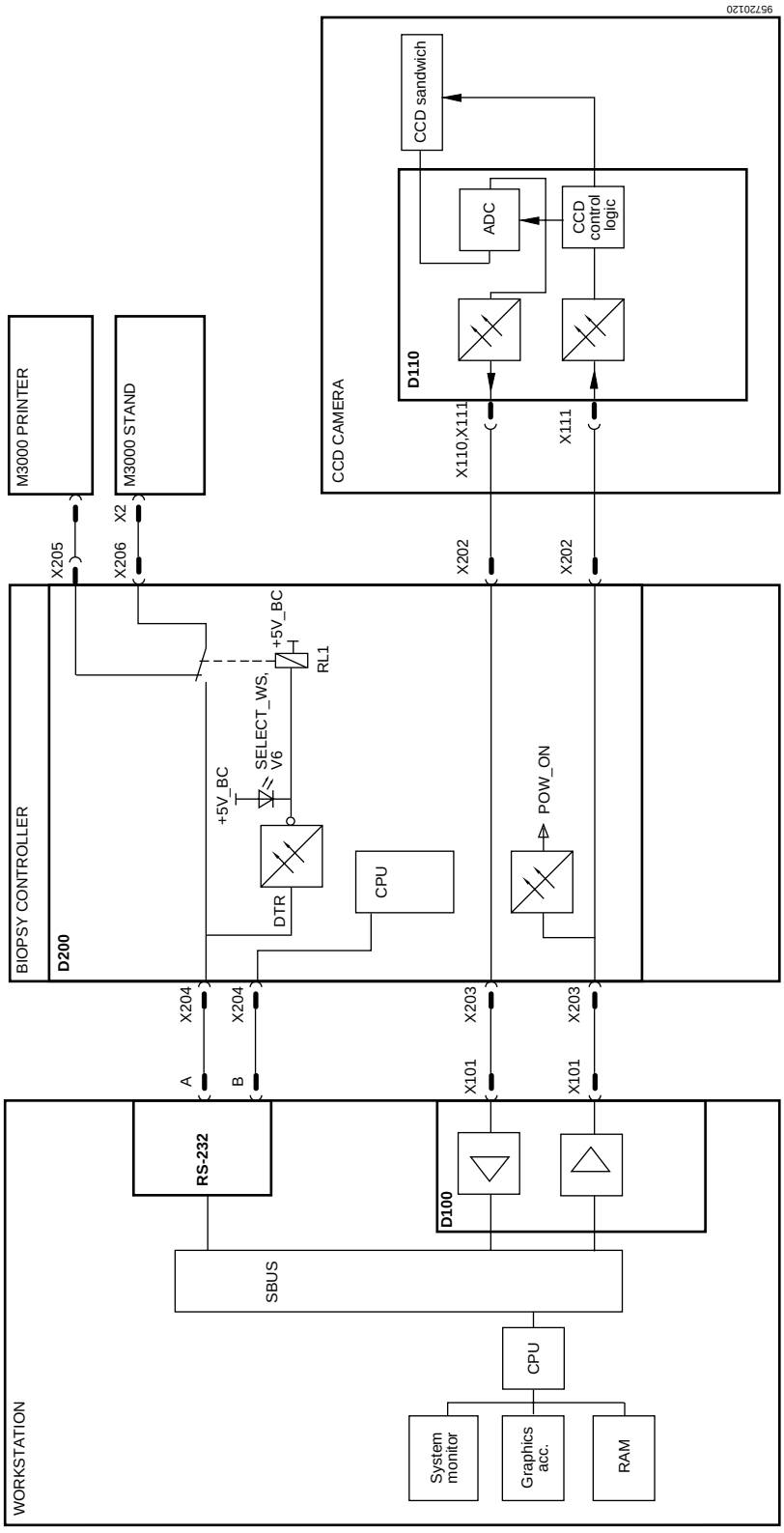

Figure 9 CCD camera and RS-232 communication

List of components

Fuses

Component	Description	Location
F1	1.6AT / 250V (7V_COM)	D200
F2	0.5AT / 250V (30V_DC)	D200
F3	1AT / 250V (20V_DC)	D200
F4	1.6AT / 250V (7V_DC)	D200
F5	1AT / 250V (5V_BC)	D200
F10	1AT / 250V (230VAC)	Mains switch, S10
F1	1.5A / 30V (not replaceable)	D100

Printed circuit boards

Component	Description	Location
D200	Biopsy control board	Biopsy controller
D100	Camera interface board	Workstation
D110	Camera control board	CCD camera

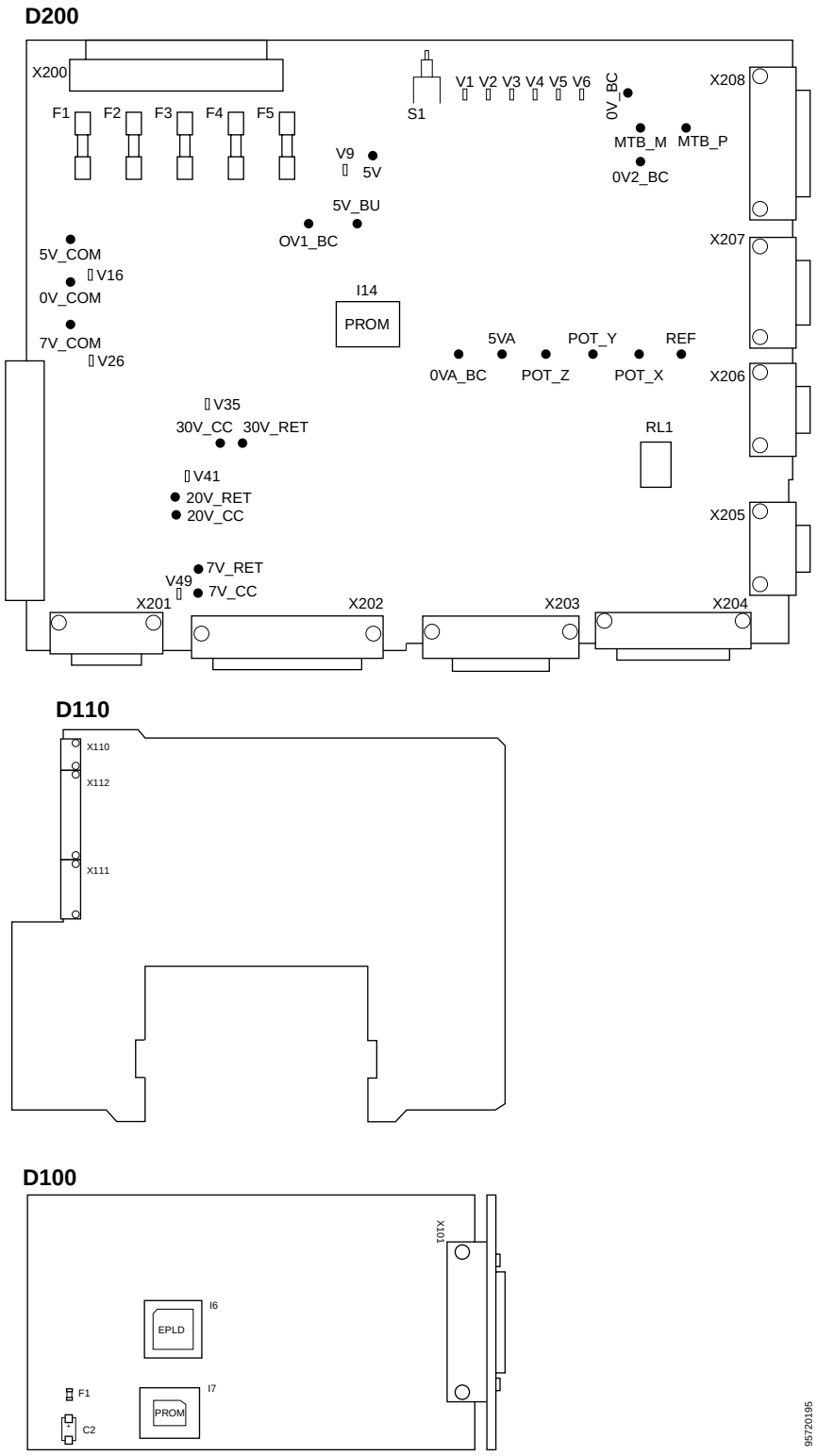

Figure 10 Printed circuit boards, testpoints and components

List of components

Potentiometers

Component	Description	Location
R1	Measurement of x-deviation	Biopsy unit
R2	Measurement of y-deviation	Biopsy unit
R3	Measurement of z-deviation	Biopsy unit

Miscellaneous

Component	Description	Location
Z1, S10	Filter with mains switch	Biopsy controller
T1	Mains transformer with thermal fuse	Biopsy controller
I14	PROM containing biopsy controller software	D200
S1	Reset switch, D200	D200

List of testpoints and LEDs

Testpoints

Testpoint	Location	Value	Signal/voltage description
5V	D200	4.75-5.25 V	5 VDC to biopsy controller
5VA	D200	4.75-5.25 V	5 V analog to biopsy controller
5V_BU	D200	4.75-5.25 V	5 VDC to biopsy unit
0VA_BC	D200	n/a	0V for 5VA
0V1_BC, 0V2_BC	D200	n/a	0 V for 5V and 5V_BU
5V_COM	D200	4.75-5.25 V	5 VDC to receiver
7V_COM	D200	6.85-7.55 V	7 VDC for communication circuits in CCD camera
0V_COM	D200	n/a	0 V for 5V_COM and 7V_COM
7V_CC	D200	6.85-7.55 V	7 VDC to CCD camera
7V_RET	D200	n/a	0 V for 7V_CC
20V_CC	D200	19.0-22.0 V	20 VDC to CCD camera
20V_RET	D200	n/a	0 V for 20V_CC
30V_CC	D200	28.5-33.0 V	30 VDC to CCD camera
30V_RET	D200	n/a	0 V for 30V_CC
POT_X	D200	0-REF	Analog voltage from the biopsy unit potentiometer R1 (x-axis)
POT_Y	D200	0-REF	Analog voltage from the biopsy unit potentiometer R2 (y-axis)
POT_Z	D200	0-REF	Analog voltage from the biopsy unit potentiometer R3 (z-axis)
REF	D200	2.0-3.0 V	Supply voltage for POT_X, POT_Y and POT_Z
C2	D100	4.75-5.25 V	5 VDC to D100 (after fuse F1/D100)

List of testpoints and LEDs

LEDs

LED	Location	Signal/voltage description
V2	D200	NVM error, CPU output pin
V1	D200	TxD error, CPU output pin
V3	D200	ADC error, CPU output pin
V4	D200	PROM error, CPU output pin
V5	D200	RAM error, CPU output pin
V49	D200	7V_CC, supply voltage
V35	D200	30V_CC, supply voltage
V9	D200	5V, supply voltage
V41	D200	20V_CC, supply voltage
V16	D200	+5V_COM, supply voltage
V26	D200	7V_COM, supply voltage
V6	D200	SELECT_WS, workstation selected for RS-232 communication with MAMMO-MAT 3000